Bookbot:

Tables created:

**1. users**

* **Primary Key:** user\_id
* Important Columns: username, email, password\_hash, age\_group, created\_at

**2. books**

* **Primary Key:** book\_id
* Important Columns: title, author, genre, age\_group, description, cover\_image\_url, created\_at

**3. audio\_books**

* **Primary Key:** audio\_id
* **Foreign Key:** book\_id → books.book\_id
* Important Column: audio\_url

**4. video\_books**

* **Primary Key:** video\_id
* **Foreign Key:** book\_id → books.book\_id
* Important Column: video\_url

**5. issue\_records**

* **Primary Key:** issue\_id
* **Foreign Keys:**  
  user\_id → users.user\_id  
  book\_id → books.book\_id
* Important Columns: issue\_date, return\_date, extended

**6. purchases**

* **Primary Key:** purchase\_id
* **Foreign Keys:**  
  user\_id → users.user\_id  
  book\_id → books.book\_id
* Important Column: purchase\_date

**7. downloads**

* **Primary Key:** download\_id
* **Foreign Keys:**  
  user\_id → users.user\_id  
  book\_id → books.book\_id
* Important Column: download\_date

**8. notifications**

* **Primary Key:** notification\_id
* **Foreign Key:** user\_id → users.user\_id
* Important Columns: message, is\_read, created\_at

**9. chat\_messages**

* **Primary Key:** message\_id
* **Foreign Key:** user\_id → users.user\_id
* Important Columns: message\_text, response\_text, timestamp

SQL Queries:

Windows PowerShell

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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\prafu> mysql -u root -p

Enter password: \*\*\*\*\*\*\*\*\*

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 8

Server version: 8.0.40 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> Create database bookbot\_updated;

Query OK, 1 row affected (0.11 sec)

mysql> USE bookbot\_updated;

Database changed

mysql> CREATE TABLE user2(

-> user\_id INT PRIMARY KEY AUTO\_INCREMENT,

-> username VARCHAR(50) UNIQUE,

-> email VARCHAR(100) UNIQUE,

-> password\_hash VARCHAR(255),

-> age VARCHAR(20),

-> created\_at DATETIME DEFAULT CURRENT\_TIMESTAMP

-> );

Query OK, 0 rows affected (0.16 sec)

mysql> CREATE TABLE books(

-> book\_id INT PRIMARY KEY AUTO\_INCREMENT,

-> title VARCHAR(255),

-> author VARCHAR(100),

-> genre VARCHAR(50),

-> age VARCHAR(20),

-> description TEXT,

-> cover\_image\_url VARCHAR(255),

-> created\_at DATETIME DEFAULT CURRENT\_TIMESTAMP

-> );

Query OK, 0 rows affected (0.03 sec)

CREATE TABLE Audio(

-> audio\_id INT PRIMARY KEY AUTO\_INCREMENT,

-> book\_id INT,

-> audio\_url VARCHAR(255),

-> FOREIGN KEY (book\_id) REFERENCES Books(book\_id)

-> );

Query OK, 0 rows affected (0.04 sec)

mysql> CREATE TABLE Video(

-> video\_id INT PRIMARY KEY AUTO\_INCREMENT,

-> book\_id INT,

-> video\_url VARCHAR(255),

-> FOREIGN KEY (book\_id) REFERENCES Books(book\_id)

-> );

Query OK, 0 rows affected (0.03 sec)

mysql> CREATE TABLE Issue(

-> issue\_id INT PRIMARY KEY AUTO\_INCREMENT ,

-> user\_id INT,

-> book\_id INT,

-> issue\_date DATE,

-> return\_date DATE,

-> extended BOOLEAN DEFAULT FALSE,

-> FOREIGN KEY (user\_id) REFERENCES user2(user\_id),

-> FOREIGN KEY (book\_id) REFERENCES books(book\_id)

-> );

Query OK, 0 rows affected (0.09 sec)

mysql> CREATE TABLE Purchase(

-> purchase\_id INT AUTO\_INCREMENT PRIMARY KEY,

-> user\_id INT,

-> book\_id INT,

-> purchase\_date DATETIME,

-> FOREIGN KEY (user\_id) REFERENCES user2(user\_id),

-> FOREIGN KEY (book\_id) REFERENCES books(book\_id)

-> );

Query OK, 0 rows affected (0.07 sec)

mysql> CREATE TABLE Downloads(

-> download\_id INT PRIMARY KEY AUTO\_INCREMENT,

-> user\_id INT,

-> book\_id INT,

-> download\_date DATETIME,

-> FOREIGN KEY (user\_id) REFERENCES user2(user\_id),

-> FOREIGN KEY (book\_id) REFERENCES books(book\_id)

-> );

Query OK, 0 rows affected (0.09 sec)

mysql> CREATE TABLE notifications(

-> notification\_id INT PRIMARY KEY AUTO\_INCREMENT,

-> user\_id INT,

-> message TEXT,

-> is\_read BOOLEAN DEFAULT FALSE,

-> created\_at DATETIME DEFAULT CURRENT\_TIMESTAMP,

-> FOREIGN KEY (user\_id) REFERENCES user2(user\_id)

-> );

Query OK, 0 rows affected (0.05 sec)

mysql> CREATE TABLE Chatbot(

-> message\_id INT PRIMARY KEY AUTO\_INCREMENT,

-> user\_id INT,

-> message\_text TEXT,

-> response\_text TEXT,

-> timestamp DATETIME DEFAULT CURRENT\_TIMESTAMP,

-> FOREIGN KEY (user\_id) REFERENCES user2(user\_id)

-> );

Query OK, 0 rows affected (0.08 sec)

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user1', 'user1@example.com', 'hashpass1', '25');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user2', 'user2@example.com', 'hashpass2', '32');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user3', 'user3@example.com', 'hashpass3', '19');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user4', 'user4@example.com', 'hashpass4', '27');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user5', 'user5@example.com', 'hashpass5', '23');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user6', 'user6@example.com', 'hashpass6', '34');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user7', 'user7@example.com', 'hashpass7', '21');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user8', 'user8@example.com', 'hashpass8', '40');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user9', 'user9@example.com', 'hashpass9', '29');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user10', 'user10@example.com', 'hashpass10', '31');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user11', 'user11@example.com', 'hashpass11', '18');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user12', 'user12@example.com', 'hashpass12', '24');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user13', 'user13@example.com', 'hashpass13', '26');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user14', 'user14@example.com', 'hashpass14', '36');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user15', 'user15@example.com', 'hashpass15', '30');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user16', 'user16@example.com', 'hashpass16', '22');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user17', 'user17@example.com', 'hashpass17', '33');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user18', 'user18@example.com', 'hashpass18', '28');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user19', 'user19@example.com', 'hashpass19', '19');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user20', 'user20@example.com', 'hashpass20', '37');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user21', 'user21@example.com', 'hashpass21', '45');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user22', 'user22@example.com', 'hashpass22', '41');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user23', 'user23@example.com', 'hashpass23', '27');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user24', 'user24@example.com', 'hashpass24', '38');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user25', 'user25@example.com', 'hashpass25', '35');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user26', 'user26@example.com', 'hashpass26', '39');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user27', 'user27@example.com', 'hashpass27', '42');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user28', 'user28@example.com', 'hashpass28', '44');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user29', 'user29@example.com', 'hashpass29', '48');

INSERT INTO user2 (username, email, password\_hash, age) VALUES ('user30', 'user30@example.com', 'hashpass30', '50');

mysql> INSERT INTO books (title, author, genre, age, description, cover\_image\_url) VALUES

-> ('Book Title 1', 'Author 1', 'Fiction', '18+', 'Description of Book 1', '/path/to/cover1.jpg'),

-> ('Book Title 2', 'Author 2', 'Non-fiction', '12+', 'Description of Book 2', '/path/to/cover2.jpg'),

-> ('Book Title 3', 'Author 3', 'Mystery', '16+', 'Description of Book 3', '/path/to/cover3.jpg'),

-> ('Book Title 4', 'Author 4', 'Fantasy', '14+', 'Description of Book 4', '/path/to/cover4.jpg'),

-> ('Book Title 5', 'Author 5', 'Sci-fi', '18+', 'Description of Book 5', '/path/to/cover5.jpg'),

-> ('Book Title 6', 'Author 6', 'Romance', '18+', 'Description of Book 6', '/path/to/cover6.jpg'),

-> ('Book Title 7', 'Author 7', 'Thriller', '18+', 'Description of Book 7', '/path/to/cover7.jpg'),

-> ('Book Title 8', 'Author 8', 'Biography', '12+', 'Description of Book 8', '/path/to/cover8.jpg'),

-> ('Book Title 9', 'Author 9', 'Self-help', '16+', 'Description of Book 9', '/path/to/cover9.jpg'),

-> ('Book Title 10', 'Author 10', 'History', '12+', 'Description of Book 10', '/path/to/cover10.jpg'),

-> ('Book Title 11', 'Author 11', 'Poetry', '12+', 'Description of Book 11', '/path/to/cover11.jpg'),

-> ('Book Title 12', 'Author 12', 'Children', '0+', 'Description of Book 12', '/path/to/cover12.jpg'),

-> ('Book Title 13', 'Author 13', 'Drama', '14+', 'Description of Book 13', '/path/to/cover13.jpg'),

-> ('Book Title 14', 'Author 14', 'Horror', '16+', 'Description of Book 14', '/path/to/cover14.jpg'),

-> ('Book Title 15', 'Author 15', 'Adventure', '12+', 'Description of Book 15', '/path/to/cover15.jpg'),

-> ('Book Title 16', 'Author 16', 'Sci-fi', '18+', 'Description of Book 16', '/path/to/cover16.jpg'),

-> ('Book Title 17', 'Author 17', 'Fantasy', '12+', 'Description of Book 17', '/path/to/cover17.jpg'),

-> ('Book Title 18', 'Author 18', 'Biography', '14+', 'Description of Book 18', '/path/to/cover18.jpg'),

-> ('Book Title 19', 'Author 19', 'Thriller', '16+', 'Description of Book 19', '/path/to/cover19.jpg'),

-> ('Book Title 20', 'Author 20', 'Non-fiction', '14+', 'Description of Book 20', '/path/to/cover20.jpg'),

-> ('Book Title 21', 'Author 21', 'History', '12+', 'Description of Book 21', '/path/to/cover21.jpg'),

-> ('Book Title 22', 'Author 22', 'Fiction', '18+', 'Description of Book 22', '/path/to/cover22.jpg'),

-> ('Book Title 23', 'Author 23', 'Romance', '14+', 'Description of Book 23', '/path/to/cover23.jpg'),

-> ('Book Title 24', 'Author 24', 'Mystery', '12+', 'Description of Book 24', '/path/to/cover24.jpg'),

-> ('Book Title 25', 'Author 25', 'Self-help', '16+', 'Description of Book 25', '/path/to/cover25.jpg'),

-> ('Book Title 26', 'Author 26', 'Sci-fi', '18+', 'Description of Book 26', '/path/to/cover26.jpg'),

-> ('Book Title 27', 'Author 27', 'Drama', '14+', 'Description of Book 27', '/path/to/cover27.jpg'),

-> ('Book Title 28', 'Author 28', 'Horror', '16+', 'Description of Book 28', '/path/to/cover28.jpg'),

-> ('Book Title 29', 'Author 29', 'Adventure', '12+', 'Description of Book 29', '/path/to/cover29.jpg'),

-> ('Book Title 30', 'Author 30', 'Poetry', '12+', 'Description of Book 30', '/path/to/cover30.jpg');

Query OK, 30 rows affected (0.05 sec)

Records: 30 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Audio (book\_id, audio\_url) VALUES

-> (1, '/path/to/audio1.mp3'),

-> (2, '/path/to/audio2.mp3'),

-> (3, '/path/to/audio3.mp3'),

-> (4, '/path/to/audio4.mp3'),

-> (5, '/path/to/audio5.mp3'),

-> (6, '/path/to/audio6.mp3'),

-> (7, '/path/to/audio7.mp3'),

-> (8, '/path/to/audio8.mp3'),

-> (9, '/path/to/audio9.mp3'),

-> (10, '/path/to/audio10.mp3'),

-> (11, '/path/to/audio11.mp3'),

-> (12, '/path/to/audio12.mp3'),

-> (13, '/path/to/audio13.mp3'),

-> (14, '/path/to/audio14.mp3'),

-> (15, '/path/to/audio15.mp3'),

-> (16, '/path/to/audio16.mp3'),

-> (17, '/path/to/audio17.mp3'),

-> (18, '/path/to/audio18.mp3'),

-> (19, '/path/to/audio19.mp3'),

-> (20, '/path/to/audio20.mp3'),

-> (21, '/path/to/audio21.mp3'),

-> (22, '/path/to/audio22.mp3'),

-> (23, '/path/to/audio23.mp3'),

-> (24, '/path/to/audio24.mp3'),

-> (25, '/path/to/audio25.mp3'),

-> (26, '/path/to/audio26.mp3'),

-> (27, '/path/to/audio27.mp3'),

-> (28, '/path/to/audio28.mp3'),

-> (29, '/path/to/audio29.mp3'),

-> (30, '/path/to/audio30.mp3');

Query OK, 30 rows affected (0.05 sec)

Records: 30 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Video (book\_id, video\_url) VALUES

-> (1, '/path/to/video1.mp4'),

-> (2, '/path/to/video2.mp4'),

-> (3, '/path/to/video3.mp4'),

-> (4, '/path/to/video4.mp4'),

-> (5, '/path/to/video5.mp4'),

-> (6, '/path/to/video6.mp4'),

-> (7, '/path/to/video7.mp4'),

-> (8, '/path/to/video8.mp4'),

-> (9, '/path/to/video9.mp4'),

-> (10, '/path/to/video10.mp4'),

-> (11, '/path/to/video11.mp4'),

-> (12, '/path/to/video12.mp4'),

-> (13, '/path/to/video13.mp4'),

-> (14, '/path/to/video14.mp4'),

-> (15, '/path/to/video15.mp4'),

-> (16, '/path/to/video16.mp4'),

-> (17, '/path/to/video17.mp4'),

-> (18, '/path/to/video18.mp4'),

-> (19, '/path/to/video19.mp4'),

-> (20, '/path/to/video20.mp4'),

-> (21, '/path/to/video21.mp4'),

-> (22, '/path/to/video22.mp4'),

-> (23, '/path/to/video23.mp4'),

-> (24, '/path/to/video24.mp4'),

-> (25, '/path/to/video25.mp4'),

-> (26, '/path/to/video26.mp4'),

-> (27, '/path/to/video27.mp4'),

-> (28, '/path/to/video28.mp4'),

-> (29, '/path/to/video29.mp4'),

-> (30, '/path/to/video30.mp4');

Query OK, 30 rows affected (0.05 sec)

Records: 30 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Issue (user\_id, book\_id, issue\_date, return\_date, extended) VALUES

-> (1, 1, '2025-04-01', '2025-04-15', FALSE),

-> (2, 2, '2025-04-02', '2025-04-16', FALSE),

-> (3, 3, '2025-04-03', '2025-04-17', FALSE),

-> (4, 4, '2025-04-04', '2025-04-18', FALSE),

-> (5, 5, '2025-04-05', '2025-04-19', FALSE),

-> (6, 6, '2025-04-06', '2025-04-20', FALSE),

-> (7, 7, '2025-04-07', '2025-04-21', FALSE),

-> (8, 8, '2025-04-08', '2025-04-22', FALSE),

-> (9, 9, '2025-04-09', '2025-04-23', FALSE),

-> (10, 10, '2025-04-10', '2025-04-24', FALSE),

-> (11, 11, '2025-04-11', '2025-04-25', FALSE),

-> (12, 12, '2025-04-12', '2025-04-26', FALSE),

-> (13, 13, '2025-04-13', '2025-04-27', FALSE),

-> (14, 14, '2025-04-14', '2025-04-28', FALSE),

-> (15, 15, '2025-04-15', '2025-04-29', FALSE),

-> (16, 16, '2025-04-16', '2025-04-30', FALSE),

-> (17, 17, '2025-04-17', '2025-05-01', FALSE),

-> (18, 18, '2025-04-18', '2025-05-02', FALSE),

-> (19, 19, '2025-04-19', '2025-05-03', FALSE),

-> (20, 20, '2025-04-20', '2025-05-04', FALSE),

-> (21, 21, '2025-04-21', '2025-05-05', FALSE),

-> (22, 22, '2025-04-22', '2025-05-06', FALSE),

-> (23, 23, '2025-04-23', '2025-05-07', FALSE),

-> (24, 24, '2025-04-24', '2025-05-08', FALSE),

-> (25, 25, '2025-04-25', '2025-05-09', FALSE),

-> (26, 26, '2025-04-26', '2025-05-10', FALSE),

-> (27, 27, '2025-04-27', '2025-05-11', FALSE),

-> (28, 28, '2025-04-28', '2025-05-12', FALSE),

-> (29, 29, '2025-04-29', '2025-05-13', FALSE),

-> (30, 30, '2025-04-30', '2025-05-14', FALSE);

Query OK, 30 rows affected (0.01 sec)

Records: 30 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Purchase (user\_id, book\_id, purchase\_date) VALUES

-> (1, 1, '2025-04-01'),

-> (2, 2, '2025-04-02'),

-> (3, 3, '2025-04-03'),

-> (4, 4, '2025-04-04'),

-> (5, 5, '2025-04-05'),

-> (6, 6, '2025-04-06'),

-> (7, 7, '2025-04-07'),

-> (8, 8, '2025-04-08'),

-> (9, 9, '2025-04-09'),

-> (10, 10, '2025-04-10'),

-> (11, 11, '2025-04-11'),

-> (12, 12, '2025-04-12'),

-> (13, 13, '2025-04-13'),

-> (14, 14, '2025-04-14'),

-> (15, 15, '2025-04-15'),

-> (16, 16, '2025-04-16'),

-> (17, 17, '2025-04-17'),

-> (18, 18, '2025-04-18'),

-> (19, 19, '2025-04-19'),

-> (20, 20, '2025-04-20'),

-> (21, 21, '2025-04-21'),

-> (22, 22, '2025-04-22'),

-> (23, 23, '2025-04-23'),

-> (24, 24, '2025-04-24'),

-> (25, 25, '2025-04-25'),

-> (26, 26, '2025-04-26'),

-> (27, 27, '2025-04-27'),

-> (28, 28, '2025-04-28'),

-> (29, 29, '2025-04-29'),

-> (30, 30, '2025-04-30');

Query OK, 30 rows affected (0.04 sec)

Records: 30 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Downloads (user\_id, book\_id, download\_date) VALUES

-> (1, 1, '2025-04-01'),

-> (2, 2, '2025-04-02'),

-> (3, 3, '2025-04-03'),

-> (4, 4, '2025-04-04'),

-> (5, 5, '2025-04-05'),

-> (6, 6, '2025-04-06'),

-> (7, 7, '2025-04-07'),

-> (8, 8, '2025-04-08'),

-> (9, 9, '2025-04-09'),

-> (10, 10, '2025-04-10'),

-> (11, 11, '2025-04-11'),

-> (12, 12, '2025-04-12'),

-> (13, 13, '2025-04-13'),

-> (14, 14, '2025-04-14'),

-> (15, 15, '2025-04-15'),

-> (16, 16, '2025-04-16'),

-> (17, 17, '2025-04-17'),

-> (18, 18, '2025-04-18'),

-> (19, 19, '2025-04-19'),

-> (20, 20, '2025-04-20'),

-> (21, 21, '2025-04-21'),

-> (22, 22, '2025-04-22'),

-> (23, 23, '2025-04-23'),

-> (24, 24, '2025-04-24'),

-> (25, 25, '2025-04-25'),

-> (26, 26, '2025-04-26'),

-> (27, 27, '2025-04-27'),

-> (28, 28, '2025-04-28'),

-> (29, 29, '2025-04-29'),

-> (30, 30, '2025-04-30');

Query OK, 30 rows affected (0.05 sec)

Records: 30 Duplicates: 0 Warnings: 0

mysql> INSERT INTO notifications (user\_id, message, is\_read) VALUES

-> (1, 'You have a new issue with a book.', FALSE),

-> (2, 'Your purchase was successful.', FALSE),

-> (3, 'Your download was successful.', FALSE),

-> (4, 'You have overdue books.', FALSE),

-> (5, 'Your book has been extended.', FALSE),

-> (6, 'A new video is available for your book.', FALSE),

-> (7, 'A new audio is available for your book.', FALSE),

-> (8, 'Your account has been updated.', FALSE),

-> (9, 'Your return date is approaching.', FALSE),

-> (10, 'You have a new message from the chatbot.', FALSE),

-> (11, 'Your issue has been returned.', FALSE),

-> (12, 'A new recommendation has been added to your profile.', FALSE),

-> (13, 'Your requested extension is approved.', FALSE),

-> (14, 'Your request for new books is available.', FALSE),

-> (15, 'New releases are available for you to download.', FALSE),

-> (16, 'Your return date has been updated.', FALSE),

-> (17, 'You have a new notification.', FALSE),

-> (18, 'Check out new releases in your favorite genre.', FALSE),

-> (19, 'Your subscription has been updated.', FALSE),

-> (20, 'You have unread messages.', FALSE),

-> (21, 'A new book has been added to your wishlist.', FALSE),

-> (22, 'Your purchase is pending confirmation.', FALSE),

-> (23, 'Your download was unsuccessful. Please try again.', FALSE),

-> (24, 'You have a new book available for purchase.', FALSE),

-> (25, 'Your issue date has been extended.', FALSE),

-> (26, 'Your purchase history is now updated.', FALSE),

-> (27, 'You have a new message from the support team.', FALSE),

-> (28, 'Your download history is updated.', FALSE),

-> (29, 'New book suggestions for you based on your preferences.', FALSE),

-> (30, 'You have unread messages in your inbox.', FALSE);

Query OK, 30 rows affected (0.01 sec)

Records: 30 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Chatbot (user\_id, message\_text, response\_text) VALUES

-> (1, 'Hello!', 'Hi! How can I assist you today?'),

-> (2, 'What is the return policy?', 'You can return books within 14 days of issue.'),

-> (3, 'Can you recommend a mystery book?', 'Sure! Check out "Book Title 3" by Author 3.'),

-> (4, 'How can I extend my issue period?', 'You can request an extension by contacting support.'),

-> (5, 'I need help with a download issue.', 'Please check your internet connection and try again.'),

-> (6, 'Is there an audio version of this book?', 'Yes, the audio version is available for this book.'),

-> (7, 'What genres do you have?', 'We have Fiction, Non-fiction, Sci-fi, Fantasy, and more.'),

-> (8, 'Do you have new arrivals?', 'Yes! We have new arrivals every month.'),

-> (9, 'Can I buy this book?', 'Yes, you can purchase it directly through our platform.'),

-> (10, 'What is the price of Book Title 5?', 'The price is $19.99.'),

-> (11, 'Do you offer discounts?', 'We offer seasonal discounts, keep an eye on the site!'),

-> (12, 'How do I download a book?', 'Click the download button on the book’s page.'),

-> (13, 'How do I return a book?', 'You can return the book by following the return process on your account page.'),

-> (14, 'Can you recommend a sci-fi book?', 'Sure! "Book Title 16" is a great pick.'),

-> (15, 'I forgot my password.', 'You can reset your password through the "Forgot Password" option on the login page.'),

-> (16, 'How can I contact support?', 'You can contact support through the contact page or by emailing support@domain.com.'),

-> (17, 'I need help with a video.', 'Please ensure you have the latest video player installed.'),

-> (18, 'What books are on sale?', 'Check our "Sales" section for books at discounted prices.'),

-> (19, 'Can I see my purchase history?', 'Your purchase history is available in your account settings.'),

-> (20, 'Can I chat with a real person?', 'You are chatting with our virtual assistant right now.'),

-> (21, 'How do I add a book to my wishlist?', 'Click the heart icon on the book page to add it to your wishlist.'),

-> (22, 'What is the best seller in fiction?', 'Our best-seller in fiction is "Book Title 22" by Author 22.'),

-> (23, 'Can I leave a review for a book?', 'Yes, you can leave a review on the book’s page.'),

-> (24, 'Do you have books for kids?', 'Yes, we have a wide selection of children’s books.'),

-> (25, 'Do you have an audiobook for "Book Title 19"?', 'Yes, we have the audiobook available for that title.'),

-> (26, 'How can I update my profile?', 'Go to the "Profile" section to update your information.'),

-> (27, 'How do I pay for a book?', 'We accept payments through credit/debit cards and PayPal.'),

-> (28, 'What is your privacy policy?', 'Our privacy policy can be found on the website’s footer.'),

-> (29, 'Can I cancel my order?', 'Orders can be canceled within 24 hours of purchase.'),

-> (30, 'Can I get an eBook version?', 'Yes, an eBook version is available for most books.');

Query OK, 30 rows affected (0.04 sec)

Records: 30 Duplicates: 0 Warnings: 0

mysql> SELECT genre, COUNT(\*) AS total\_books FROM books GROUP BY genre;

mysql> SELECT AVG(age + 0) AS avg\_age FROM books;

mysql> SELECT title, LENGTH(description) AS description\_length FROM books ORDER BY description\_length DESC LIMIT 1;

**1. INNER JOIN**

Returns records with matching values in both tables.  
  
SELECT u.username, b.title  
FROM user2 u  
INNER JOIN Issue i ON u.user\_id = i.user\_id  
INNER JOIN books b ON i.book\_id = b.book\_id;

**2. LEFT JOIN**

Returns all records from the left table, and matched records from the right table.  
  
SELECT u.username, b.title  
FROM user2 u  
LEFT JOIN Issue i ON u.user\_id = i.user\_id  
LEFT JOIN books b ON i.book\_id = b.book\_id;

**3. RIGHT JOIN**

Returns all records from the right table, and matched records from the left table.  
  
SELECT u.username, b.title  
FROM user2 u  
RIGHT JOIN Issue i ON u.user\_id = i.user\_id  
RIGHT JOIN books b ON i.book\_id = b.book\_id;

**4. FULL OUTER JOIN (Simulated)**

Returns all records when there is a match in one of the tables.  
  
SELECT u.username, b.title  
FROM user2 u  
LEFT JOIN Issue i ON u.user\_id = i.user\_id  
LEFT JOIN books b ON i.book\_id = b.book\_id  
  
UNION  
  
SELECT u.username, b.title  
FROM user2 u  
RIGHT JOIN Issue i ON u.user\_id = i.user\_id  
RIGHT JOIN books b ON i.book\_id = b.book\_id;

**5. CROSS JOIN**

Returns all possible combinations of rows from both tables.  
  
SELECT u.username, b.title  
FROM user2 u  
CROSS JOIN books b;

**Normalization (Up to BCNF)**

Let’s consider the user2 table:   
(user\_id, username, email, password\_hash, age, created\_at)

**1NF (First Normal Form)**

- Atomic values: No multivalued or repeating columns.  
- All tables are already in 1NF.

**2NF (Second Normal Form)**

- Must be in 1NF.  
- Non-prime attributes are fully functionally dependent on the whole primary key.  
- Your tables like Issue(issue\_id PK, user\_id FK, book\_id FK, issue\_date, ...) satisfy 2NF.  
  
-- Query to show Issue table in 2NF (each non-prime attribute fully depends on the whole PK)  
SELECT issue\_id, user\_id, book\_id, issue\_date, return\_date, extended  
FROM Issue;

**3NF (Third Normal Form)**

- Must be in 2NF.  
- No transitive dependency (non-prime → non-prime through another non-prime).  
- Your user2 and books tables are in 3NF.  
  
-- Query to show a 3NF-compliant user table (no transitive dependencies)  
SELECT user\_id, username, email, password\_hash, age, created\_at  
FROM user2;

**BCNF (Boyce-Codd Normal Form)**

- Stronger than 3NF: for every functional dependency X → Y, X must be a superkey.  
- All your tables are in BCNF since every dependency has a primary/superkey as determinant.  
  
-- Query to demonstrate a BCNF-compliant table, e.g., books (every determinant is a superkey)  
SELECT book\_id, title, author, genre, age, description, cover\_image\_url, created\_at  
FROM books;